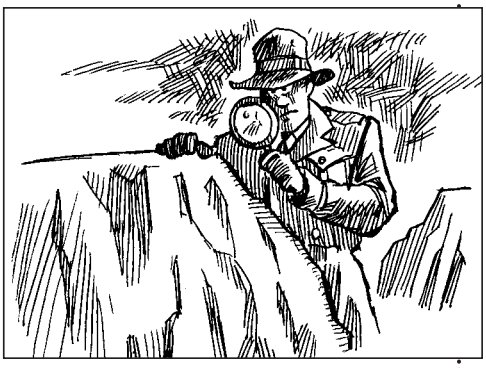
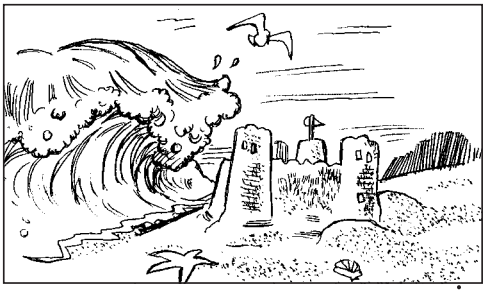
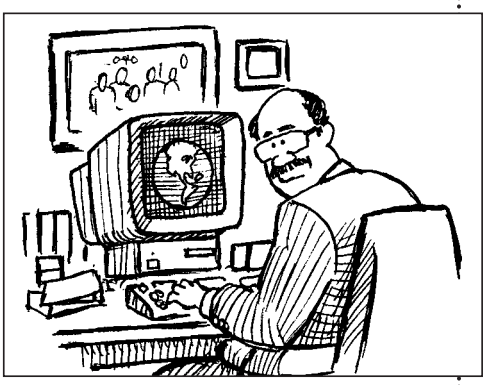
Climate Detectives







Scientists have to think like detectives. They look for clues to help them understand how the world works. Then they investigate the clues to find evidence—real facts that can give them a better idea of what is going on.

Many of the world's leading climate scientists believe that our earth's climate is changing because they have good evidence. The earth has warmed about 1 degree Fahrenheit (FAIR in hiyt) in the last 100 years. And the four warmest years this century all happened in the 1990s.

Here are some of the ways that scientists gather evidence about climate change:

Melting Glaciers

A glacier (GLAY shuhr) is a large sheet of ice that moves very, very slowly. Many glaciers in the world are now melting. For example, glaciers are melting in Montana's Glacier National Park. Some scientists think the glaciers are melting partly because the earth is getting warmer.

Rising Sea Level

Have you ever built a sandcastle on the beach, close to the ocean on wet sand? If you have, you probably know that the sandcastle won't last very long. Chances are the waves will wash away the sandcastle as soon as the tide comes in. The water goes higher up the beach when the tide comes in. At most shores throughout the world, two high tides and two low tides occur every day. But now the level of the sea is rising, so the high tides will be higher than they were before. Over the last 100 years, the level of the sea has risen about 6-8 inches worldwide. When the sea level rises, the tide goes farther up the beach.

Scientists think the sea has risen partly because of melting glaciers and sea ice. When some glaciers melt, they release water into the sea and make it higher than it was before. Scientists also think that hotter temperatures in the sea make it rise even more. Heat makes water expand. When the ocean expands, it takes up more space.

Climate Crystal Balls

Scientists are not fortune tellers. They don't know exactly what will happen in the future. But they can use special computer programs to find out how the climate may change in the years ahead. And the computer programs tell us that the earth may continue to get warmer.

Together, the melting glaciers, rising seas, and computer models provide some good clues. They tell us that the earth's temperature will probably continue to rise as long as we continue increasing the amount of greenhouse gases in the atmosphere.

NOAA/NASA/EPA CLIMATE CHANGE PARTNERSHIP